IP-Stile

KT-02

User Guide

PERCo®

IP-Stile

KT-02

User Guide

CONTENT

Dear Customer,

Thank you for purchasing PERCo IP-Stile. Please follow instructions given in this Manual carefully, and this quality product will provide many years of trouble-free use.

This Manual contains information that is necessary for comprehensive use of capabilities of the IP-Stile by the checkpoint operator.

Abbreviations adopted in the Manual:

• ACS — access control system;
• KT-02 IP-Stile - entrance control system;
• RC — remote control panel.

1 APPLICATION

The KT-02 IP-Stile (henceforth KT-02) is designed for control of access to a facility by means of proximity cards under authorized/ nonauthorized principle and event logging in nonvolatile memory.

Install one KT-02 per each 500 people working the same shift, or on the basis of the maximum throughput capacity 30 passages per minute.

2 MAIN FEATURES

• KT-02 can operate by the following devices:
  • remote control panel;
  • wireless remote control;
  • readers (when an access cad is presented);
  • PC (connected to local area network).

• KT-02 housing is powered with safe voltage.

• KT-02 has low power consumption.

• Inbuilt optical arm rotation sensors ensure accurate passage registration in ACS.

• An inbuilt mechanical release lock ensures safe emergency unlocking of KT-02 with a key (providing free rotation of the barrier arms).

• The KT-02 housing end faces are provided with visual indication modules.

• The housing contains two readers of proximity cards.

• Interrogation zones of the readers share location with the indication modules.

3 DESIGN

Figure 1 – KT-02 design :

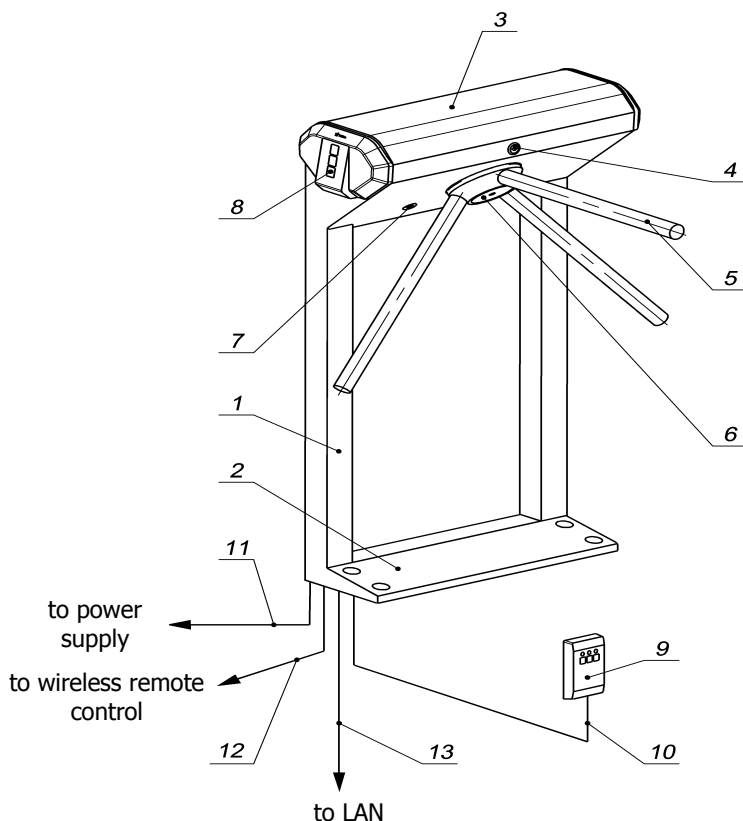Standard delivery set:

- – 1 — frame; 2 — base; 3 — top cover; parts 1-3 make housing; 4 — top cover lock;
- – 5 — barrier arm, 6 — cap to cover barrier arms adjusting points; 7 — mechanical release lock; 8 —indication module; 9 — control panel; 10 — control panel cable;

*Not included in standard delivery set:

- – 11 — power cable; 12 — wireless remote control cable;
- – 13— LAN connection cable.

KT-02 consists of a housing with an inbuilt controller and two readers, three barrier arms and a remote control panel (ref. Figure 1, parts 1-3, 5 and 9). After each passage through KT-02 the barrier arms are automatically reset in the home position.

For visual informing on current KT-02 status both housing end faces are equipped with indication modules. An access card reader is built-in inside the housing under each indication module.

The indication module features three visual indicators (ref. part 8 in Figure 1 and Figure 2):

   − the green light (*a*) indicates that the passage is authorized;

   − the amber light (*b*) indicates that card presentation is expected;

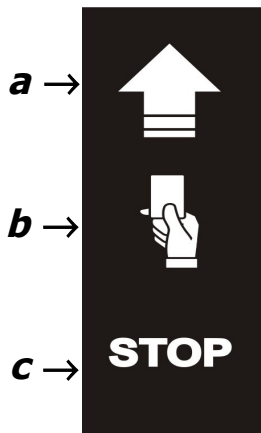   − the red indicator (c) indicates that the passage is denied.

Figure 2 – Visual indicators of the indication module

The remote control panel is connected to the housing with a cable (ref. parts 9-10 in Figure 1 and Figure 3) and features:

− three buttons for setting KT-02 operating modes;

− three light indicators (two green above the side buttons and one green indicator above the middle button).

The left and right side buttons (henceforth the *«GO»* buttons) are for unlocking KT-02 in the corresponding directions: the left button — in thee left direction, the right button — in the right direction. The middle button (henceforth the *«STOP»* button) is for denying passage through KT-02.

KT-02 operation by the remote control panel, indication on the RC and the indication modules according to KT-02 operating modes are described below in section 4.

KT-02 is connected by cables to a power supply unit, an wireless remote control device (if applicable, ref. Section 10 below) and to a local area network (ref. parts 11-13 in Figure 1).
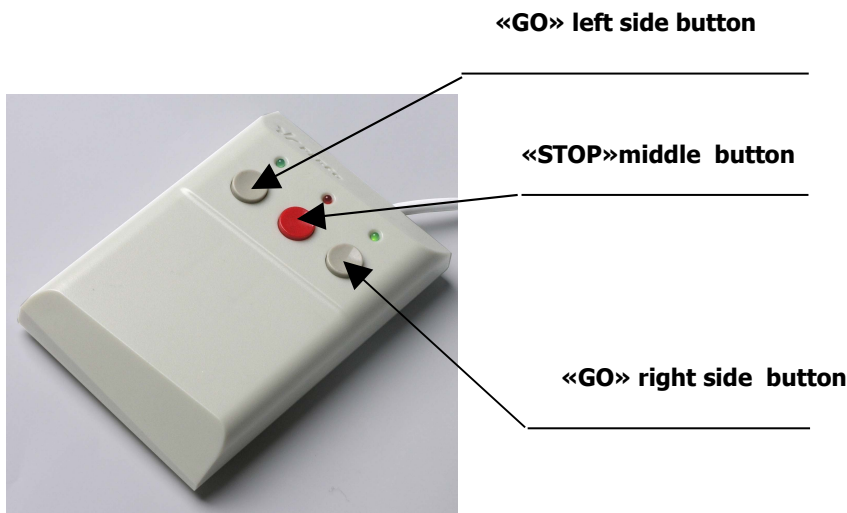

Figure 3 − Remote control panel

4 OPERATION

4.1 Operation conditions

KT-02 operation is allowed at ambient temperature from +1 °C to +40 °C and relative air humidity up to 80% at +25 °C.

KT-02, with regard to environmental exposure, conforms to GOST 15150-69, category NF 4 (operation in premises with climate control).

DO NOT allow:

• KT-02 tugging, jerking or thumping;

• moving bulky goods through the passageway that exceed its width;

• dismantling and adjusting KT-02 operational parts except for the maintenance work and troubleshooting specified in the KT-02 Assembly & Operation Manual;

• cleaning the product with substances that may cause damage or corrosion.

4.2 Safety measures

When operating KT-02, always observe general safety requirements for use of electrical equipment.

DO NOT use KT-02:

– when operation conditions don't conform to those given in the section 4.1;

– when the supply voltage differs from that given in the section 9.

The power supply operation should be carried out according to safety requirements in its in-line documentation.

4.3 Power-up

Make sure all the connections are correct (ref. KT-02 Assembly & Operation Manual, sections. 8.4.5-8.4.6). Make sure the barrier arms are in the home position (the passageway is blocked by a barrier arm). Make sure the mechanical release lock is closed (KT-02 is mechanically locked, ref. section 5.2). Connect the power supply to the mains with electric parameters as per its documentation.

Turn the power on. At the first power-up while KT-02 is not yet configured,all the three indicators of the indication modules are blinking and the red indicator above the STOP button is on. After configuration and subsequent power-ups the indication will reflect the corresponding operating modes as currently set by the PC or the remote control panel (ref. sections 4.4-4.7).

4.4 KT-02 operation

KT-02 as an access control system (ACS) component can be operated by the remote control panel, a wireless remote control device, readers (when an access card is presented) or by a PC connected to a local area network.

Each KT-02 passage direction features the following operating modes (set from the computer):

• **«Open»** — KT-02 is unlocked in the authorized direction, pressing of the remote control panel button responsible for this direction is ignored;

• **«Control»** — KT-02 is locked in the corresponding direction, pressing of the remote control panel button responsible for this direction or presentation of an access card authorized for passage results in unlocking of KT-02 in this direction for a time set during the system configuration;

• **«Closed»** — KT-02 is locked in the corresponding direction, pressing of the remote control panel button responsible for this direction is ignored; whatever access card is presented, the system registers an event of an authorized access attempt.

4.5 Operation by remote control panel

KT-02 operation by the remote control panel is available if the *«Control»* mode is set on the PC. Setting of KT-02 operating modes and the corresponding indication are given in Table 1.

Table 1

KT-02 operating modes

Nº	Operating mode	Actions by the Operator	RC indication	Turnstile indication	KT-02 status
1	**«Always locked»** (KT-02 is closed for both entrance and exit)	Press the Stop button shortly	The red indicator is on	The amber indicators for both directions are on	The barrier arms are locked in the home position. The passageway is blocked by the barrier arm.
2	**«Single passage in the set direction** (KT-02 is open for a single passage by one person in the set direction and closed for passage in another direction)	Press shortly the Go button responsible for the authorized direction	The green indicator above the Go button responsible for the authorized direction is on	The green indicator for the authorized direction and th e amber indicator for another direction are on	The barrier arms are unlocked for a single turn in the authorized direction. After the turn the arms are locked.
3	**«Bidirectional single passage»** (KT-02 is open for a single passage in each direction)	Press both Go buttons together shortly	Both green indicators are on	The green indicators for both directions are on	The barrier arms are unlocked for consecutive single turns in each authorized direction. After each turn the arms are locked in the corresponding direction.

4	**«Free passage in the set direction»** (KT-02 is open for free passage in the authorized direction and closed in another	Press shortly the Stop button together with the Go button responsible for the authorized direction	The green indicator above the Go button responsible for the authorized direction is on	The green indicator for the authorized direction and the amber indicator for another direction are on	The barrier arms are unlocked indefinetly for multiple turns in the authorized direction
5	**«Free passage in the set direction and a single passage in the opposite direction»** (KT-02 is open fior free passage in the authorized direction and a single passage in another)	Press shortly the Stop button together with the Go button responsible for the free passage direction; then press the other Go button shortly	Both green indicators are on		The barrier arms are unlocked indefinitely for multiple turns in the free passage direction and a single turn in the single passage direction
6	**«Free passage in both directions»** (KT-02 is open for free passage in both directions)	Press shortly the three buttons together	Both green indicators are on	The green indicators for both directions are on	The barrier arms are unlocked indefinitely for multiple turns in both directions

Features of operating modes setting

– the passage directions are independent of each other, i.e. setting an operating mode in one direction does not change an already set operating mode in another;

– the *"Single passage in the set direction"* operating mode can be changed for the free passage in the same direction or the "Always locked" mode;

– the *"Free passage in the set direction"* can only be changed for the *"Always locked"* mode;

– after power-up, the KT-02 is reset in the *"Always locked "* operating mode (the mechanical release lock is closed);

– in the single passage modes KT-02 will be closed as soon as a single passage in the authorized direction is completed;

– if the passage is not completed within the passage waiting time, KT-02 is automatically locked; the passage waiting time countdown starts since the moment of pressing the authorizing Go button. The passage waiting time is preset by the software during the configuration, the default setting being 4 seconds;

– when passage is authorized for both directions, after one passage is completed, the passage waiting time countdown for another direction starts;

– if KT-02 receives control commands by stand-alone devices and ACS simultaneously, a higher priority command will be executed. Priority of command in descending order: *by reader - by PC - by remote control panel*.

4.6 Operation by readers

For KT-02 operation by inbuilt readers with access card presentation it is necessary to enter the card list into the software. This allows arrangement of access control to the facility under authorized/non-authorized principle and event logging in the controller nonvolatile memory.

The access card should be presented by taking it to the reader's interrogation zone (ref. Figure 5). When the presented access card is operable and valid at the moment of the passage, KT-02 is unlocked the green GO indicator on the side where the card is presented goes. After completion of the passage KT-02 and the indication return to the reset state.

When an access card not entered in the list is presented, the red indicator on the side of the presentation goes on, the audio signal sounds, KT-02 is not unlocked; the indication returns to the reset state in *3* seconds.

4.7 Operation by PC

LAN connected KT-02 operation by PC is undertaken as per PERCo-SL01 Software Operation Manual.

4.8 Operating principle

When the *«access authorized»* signal is given (by the remote control panel, wireless remote control, a reader or PC) the barrier arma are unlocked and passage in the authorized direction is available.

When the barrier arms rotate 67°, KT-02 registers a passage event in the corresponding direction.

In the single passage mode, after the barrier arms rotate 67° (or the time since the moment of pressing the GO button exceeds the passage waiting time, ref. section 4.5), passage in this direction closes (a *53°* reset of the barrier arms is available to complete the passage) and KT-02 is ready to execute the next command.

In the always free mode, after the barrier arms rotate 67°, passage in this direction remains open.

When the barrier arms return in the home position (the barrier arms have rotated 112°), KT-02 is registered as returned to the reset state.

5 Emergency actions

5.1 Emergency exit by use of anti-panic barrier arms

An additional emergency exit can be arranged by means of anti-panic barrier arms. The design of the barrier arms enables arranging of a free escape passage without any special means or tools.

To make the passageway free, just pull the horizontal barrier arm along its axis outwards the hub until released, then fold the arm down (ref. Figure 4).
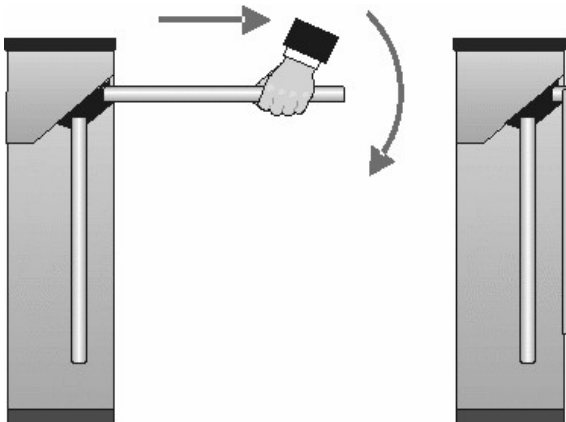
Figure 4 — Anti-panic barrier arms operation

5.2 Mechanical unlocking

The mechanical unlocking feature is designed for unlocking the barrier arms in case of emergency, e.g. if the power supply is down.

Proceed as follows to mechanically unlock KT-02:

-insert the key into the mechanical release lock (part 7 in Figure 1);

-turn the key clockwise until it stops (open the lock, the lock internal mechanism moving out);

-make sure KT-02 is unlocked by manually rotating the barrier arms a few turns in each direction.

To lock KT-02 mechanically:

- set the barrier arms in the home position;

- press the internal lock mechanism recessing it into the housing until it clicks;

- make sure KT-02 is locked and the barrier arms can not be rotated in either direction.

6 DELIVERY SET

KT-02 is packed in a transportation box for its protection against damage during transportation and storage.

Box overall dimensions (L x W x H) — 1120x720x350 mm.

Maximum gross weight of the boxed KT-02 is 42 kg (standard delivery set).

Box contents:

– IP-Stile housing..1

– barrier arms...3

– Remote control panel with cable..1

– mechanical release key..2

– key to housing cover lock..2

– jumper...1

– stop spring 2

– self-adhesive wire retainer...3

– fixing tape 100 mm...6

– insulation bushing..2

– plug ∅30 mm...6

– Certificate...1

– KT-02 Assembly & Operation Manual..1

– KT-02 User Guide...1

7 TRANSPORTATION AND STORAGE

KT-02 in the original package should be transported in closed freight containers or other closed type cargo transport units.

During storage and transportation the boxes can be stacked no more than 4 layers high.

The storage of the product is allowed indoors at ambient temperature from – 25 °C to + 40 °C and relative air humidity up to 98% at +25 °C.

After transportation or storage at temperatures below zero or in high air humidity, prior to the installation the product must be kept unpacked for no less than 24 hours indoors in the climate conditions as per section 4.1.

8 MARKING

The KT-02 marking label is placed inside on the back of the housing. When it is necessary to access the label reading the inbuilt controller elements, remove the top cover (see part 3 in Figure 1) taking the following steps:

- turn KT-02 power off;

- insert the key into the top cover lock (part 4 in Figure 1), turn it clockwise until stop and open the lock (the lock internal mechanism will move out together with the latch);

- holding the back edge of the cover with one hand, lift the front edge gently by another — the cover must turn relative to the inside hooks. Remove the cover carefully making sure not to damage the controller underneath;

- lay the cover on an even steady surface.

Make sure the cover is returned in its operative position observing all the mentioned precautions. When the cover is on, close the cover lock pressing on the internal mechanism and recessing it into the housing until it clicks. Turn the power on for KT-02 to continue operation.

KT-02 standard delivery set (ref. section 4.1) is packed in a transportation box for protection against damage during transportation and storage.

9 TECHNICAL SPECIFICATIONS

Operational voltage_____12±1,2 V DC

Maximum power consumption_____15 W

Throughput capacity in single passage mode_____30 persons/min

Throughput capacity in free passage mode_____60 persons/min

Passageway width_____550 mm

Maximum barrier arm rotation force_____3,5 kgf

Number of readers_____2

    Minimum card reading range at the nominal operational voltage:

EM-Marin cards_____6 cm

    Number of inputs:

remote control_____3

testing_____2

    Number of outputs:

relay (relay outputs NC, C and NO)_____2

"open collector" type_____2

Communication interface standard_____Ethernet (IEEE 802.3)

    Number of users (access cards)

KT-02 1-01_____up to 10000 cards

KT-02 2-01_____up to 50000 cards

    Event memory capacity

KT-02 1-01_____up to 10000 events

KT-02 2-01_____up to 50000 events

RC cable length_____no less than 6.6 m

RC overall dimensions (L x W x H)_____127x84x30 mm

Maximum RC net weight_____0,35 kg

Electric shock protection class _____III under GOST R IEC 335-1-94

Minimal mean time to failure_____2,000,000 passages

Mean lifetime_____8 years

Overall dimensions with barrier arms (LxWxH),_____640x683x1040 mm

Maximum net weight_____35 kg

The inbuilt controller has a unique physical address designated at the production stage (MAC-address given on the label on the circuit board), as well as an IP- address (given on the label on the processor microchip), a subnet mask (255.0.0.0), a gateway IP-address (0.0.0.0). The controller supports updating of the embedded software through the local are newtwork.

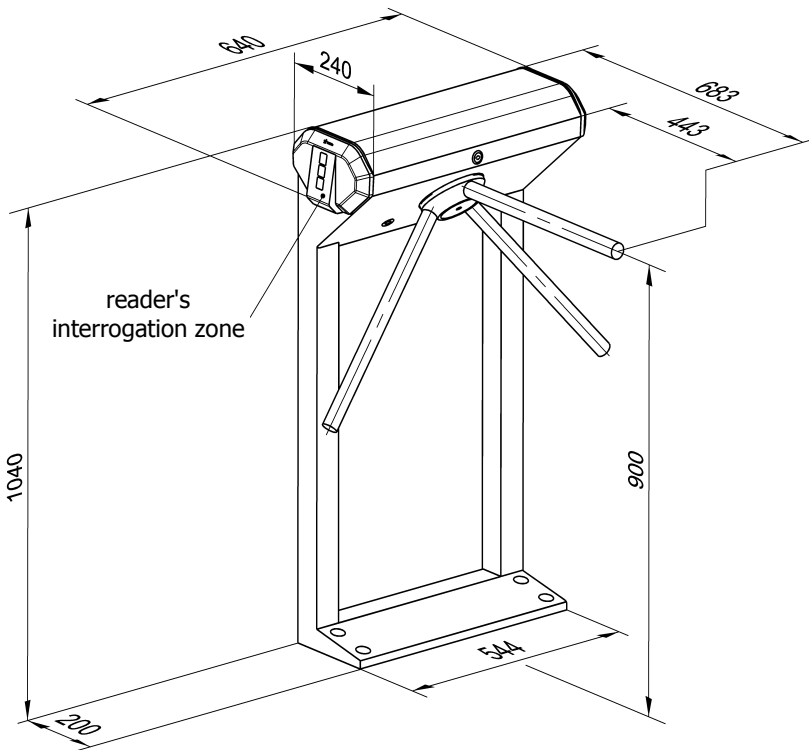KT-02 overall dimensions are given in Figure 5.

reader's interrogation zone

Figure 5 – KT-02 overall dimensions

10 OPTIONAL DEVISES AND MOUNTING HARDWARE

The following optional devices and mounting hardware can be used with KT-02 (supplied to customer order):

• power supply;

• intrusion detector and siren (used only when KT-02 operates as part of the PERCo-S-20 system);

• wireless remote control (consisting of a receiver and two transmitters with operating range up to 40 m).

The wireless remote control device can be connected to KT-02:

− instead of the remote control panel;

− together with the remote control panel (parallel connection).

When wireless control is used, the receiver is connected to KT-02 with cable (part 12 in Figure 1). KT-02 operation by wireless remote control is similar to operation by the remote control panel: the buttons of the receiver tags perform the same functions as the buttons of the remote control panel (ref. section 3 above).

Parallel connection of wireless remote control and the control panel may lead to signal overlapping and KT-02 will respond to the resulting combination of output signals accordingly.

11 WARRANTY AND AFTER-SALES SERVICE

Warranty terms and technical support contact information are given in the certificate to KT-02.

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